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# WEBSITE QUALITY: A CROSS-CULTURAL COMPARISON OF UNITED STATES AND CHINA BUSINESS CUSTOMERS

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## Abstract

*Website quality has been given much attention as of late. In particular the factors that impact a consumer's perception of website quality is of great interest. This paper takes a currently validated measure of business-to-consumer website quality (WebQual™) and applies it to the Chinese Web users in order to study the cross-cultural differences and similarities of US and Chinese customers.*

**Keywords:** Website quality, cross-culture, US, China

## Introduction

The Web is a critical channel to reach customers. Measuring website quality is becoming more and more critical as organizations attempt to increase their website's influence on consumers' behavior (purchasing). However, the cultural differences are hypothesized to affect the evaluation of website quality by consumers. This study intends to study the cultural influence on US and Chinese customers with regard to their perception of website quality.

Cultural research has received more attentions since cultural localization became a necessary adjunct to technology transfer and global business communication (Gould, 2000). Marchewka (1996) studied the cultural and political influences of IT diffusion in China. However, little literature is available on cross-cultural comparison of US and Chinese customers especially in the area of e-commerce.

## Background

### *Culture*

Cultural research has identified five national culture dimensions: power distance, uncertainty avoidance, individualism-collectivism, masculinity-femininity, and long-term orientation (Hofstede 1980). According to Hofstede Americans and Chinese differ in *power distance* (being the extent to which the less powerful members of institutions and organizations with a country expect and accept that power is distributed unequally), *uncertainty avoidance* (being the extent to which the members of a culture feel threatened by uncertain or unknown situations), *individualism-collectivism* (being the extent to which the members of a culture act as individuals or as members of cohesive groups), and *time orientation* (the extent to which a society is focused on long-term versus short-term goals). US citizens are considered to have a greater degree of autonomy between subordinates and bosses (US Power Distance Index scored 40 while Hong Kong scored 68 on Hofstede scale), be more individualistic (US Individualism Index scored 91 and Hong Kong scored 25 on Hofstede scale), be more uncertainty-avoiding (US Uncertainty Avoiding Index scored 46 and Hong Kong scored 29 on Hofstede scale), and shorter-term in focus (US Long-term Index scored 29 and Hong Kong scored 118 on Hofstede scale) than the Chinese. As far as masculinity-femininity (masculinity pertaining to societies in which social gender roles are clearly distinct and femininity pertaining to societies in which social gender roles

overlap) is concerned, the countries do not have great difference (US Masculinity Index scored 62 and Hong Kong scored 57 on Hofstede scale).

WebQual™ (Loiacono 2000), a validated website quality measures shown to predict intention (to purchase), was employed in the study to better understand the differences and similarities between US and Chinese consumers. The initial study is based on a survey that samples US and Chinese customers of 12 US commercial websites and 12 Chinese commercial websites that can be grouped as online shopping, online hotel booking and online air tickets purchasing. A second round of data collection is currently underway to collect the 12 dimensions of website quality as well as cultural dimensions. The findings will assist in launching website(s) that appropriately address cultural differences.

### Website Quality

WebQual™ is a comprehensive website quality measure designed to capture those aspects of a website that influence a users' intention to revisit. It identifies 12 dimensions of website quality: informational fit to task, interaction, trust, response time, design appeal, intuitiveness, visual appeal, innovativeness, flow – emotional appeal, integrated communication, business processes, and substitutability (Table 1). Each dimension of WebQual™ is represented by three statements, which subjects responded to using a 7-point Likert scale (1 being strongly agreed to 7 being strongly disagreed). In our paper, WebQual™ was used to study the cultural influence on US and Chinese website customers.

**Table 1. Initial WebQual™ Dimensions**

Initial Higher Level Category	Dimension	Description
<b>Ease of Use</b>	Ease of Understanding	Easy to read and understand.
	Intuitive Operation	Easy to operate and navigate.
<b>Usefulness</b>	Informational Fit-to-task	The information provided meets task needs and improves performance.
	Tailored Communication	Tailored communication between consumers and the firm.
	Trust	Secure communication and observance of information privacy.
	Response Time	Time to get a response after a request or an interaction with a site.
<b>Entertainment</b>	Visual Appeal	The aesthetics of a website.
	Innovativeness	The creativity and uniqueness of site design.
	Emotional Appeal	The emotional effect of using the website and intensity of involvement
<b>Complementary Relationship</b>	On-Line Completeness	Allowing all or most necessary transactions to be completed on-line (e.g., purchasing over the website)
	Relative Advantage	Equivalent or better than other means of interacting with the company.
	Consistent Image	The website image is compatible with the image projected by the firm through other media

### Research Approach and Design

A sample of 98 Chinese and 254 US consumers evaluated a variety of websites (Table 2), including product and service sites. In order to make sure the websites have equal functionality, twelve Chinese site and twelve English web sites were selected, where each group contains six online shopping web sites, three hotel booking web sites and three air ticket purchasing web sites. Each subject visited a website and then evaluated it using WebQual™. In order to ensure there was no problem with the data

collection due to misinterpretation of the survey, WebQual™ was translated into Chinese and then back-translated by native Chinese speakers.

We hypothesize that WebQual™ will hold true for both cultures, but that culture will influence some factors.

**Table 2. Subject Demographics**

	<b>US</b>	<b>China</b>
<b>Number of subjects</b>	254	98
<b>Average age</b>	19.9	22.6
<b>Gender</b>	Male = 50.0% Female = 49.6%	Male = 74.8% Female = 25.2%
<b>Ever made purchase over the Web</b>	Yes = 71.7% No = 28.3%	Yes = 57.7% No = 42.3%

## Preliminary Findings

Though this research is still in progress, the preliminary findings are presented here. Average scores for each dimension and an average overall score for the website (being the sum of the average dimension scores) were calculated. Based on these currently available data two-tailed, two-sample t-Tests were conducted for each dimension and the overall score to determine differences in the average scores of Chinese and US customers. The average scores and test results are shown in Table 3.

Overall, the WebQual™ scores for US and Chinese customers were not significantly different ( $p$ -value = .10). Both groups appear to evaluate sites similarly, regardless of culture. Looking at specific WebQual™ factors, culture was found to influence several dimensions. US subjects evaluated the *interaction*, *response time*, *design appeal*, *intuitiveness*, *business processes*, and *substitutability* significantly higher than did Chinese subjects. The higher score on design appeal and intuitiveness may be attributed to the US's higher degree of uncertainty avoidance. Those living in cultures with high uncertainty avoidance would have higher job stress, more written rules, and more activities that are more structured. A more structured design that allows intuitive movement throughout the site would be valued by US customers who desire greater structure and less uncertainty. The difference in the means between tailored communications, response time, business processes, and substitution are more likely affected by the group's time-orientation. US customers who are considered short-term oriented may want to have quick interactions with a site that also allow them to interact (search) for what they want immediately upon entering the site. Similarly, US customers are likely to expect the option of online purchases right from the website. On-the-other-hand, Chinese customers are more patient in their approach and would be less demanding. This again may be due to China's Confucianism background which teaches the virtue of being patient and persevering.

Chinese subjects assessed *trust* more highly than US subjects. This is not surprising since Chinese customers have lower individualistic tendencies and would be more likely to trust company sites as compared to US customers. US customers, being more individualistic, would be more concerned with keeping information private.

Not all the relationships were found to be significant. Chinese customers scored visual appeal, emotional appeal, and integrated communications slightly higher than US customers, but not significantly. Similarly, US customers rated innovative higher than their Chinese counterparts. These findings are tentative, however, and further testing is required.

**Table 3. Twelve Dimensions of Website Quality (Loiacono, et al. 2000) and Preliminary Results**

Dimension	Description of Concept	Average Score of US Subjects	Average Score of Chinese Subjects	t-Test Probability
1 Informational Fit to Task	Relates to the ability of the website to meet the consumer's informational needs.	5.21	5.08	0.33
2 Interaction	Relates to the ability of consumers to interact with the website to receive tailored/personalized information or service.	5.28	4.92	0.00*
3 Trust	Relates to the concern for security and information privacy.	4.67	5.09	0.01*
4 Response Time	Relates to the time that it takes consumer to download and interact with website.	5.33	4.86	0.00*
5 Design Appeal	Relates to the aesthetic "beauty" of a website as well as the navigational system.	5.66	5.27	0.00*
6 Intuitiveness	Relates to the ease of using/interacting the website.	5.79	5.52	0.04*
7 Visual Appeal	Relates to the website's visual appeal.	4.56	4.58	0.89
8 Innovativeness	Relates to the website's uniqueness and creative feel.	4.75	4.59	0.24
9 Flow-Emotional Appeal	Relates to the emotional affect the website has on consumers.	4.62	4.73	0.36
10 Integrated Communication	Relates to the relationship the website has with respect to other forms of media (radio, television, etc.).	4.79	4.94	0.22
11 Business Processes	Relates to the relationship the website has with respect to the company's business processes (e.g., purchasing over the website).	5.59	5.18	0.00*
12 Substitutability	Relates to the use of the website as an alternative means of interacting with the company.	5.62	5.21	0.00*
Overall Score		185.61 (5.16)	179.89 (5.00)	0.10
* statistically significant at the .05 level				

## Implications

This research (in progress) has identified many similarities in the perception website quality by US and Chinese business-to-consumer customers. Especially with regard to the WebQual™ dimension, *visual appeal*, both subject groups' perceptions of the website were nearly identical. Also the dimensions *informational fit-to-task*, *innovativeness*, *emotional appeal*, and *integrated communication* had t-test probabilities higher than 0.20. This implies that multinational companies designing sites for both customer groups can address these dimensions in a similar fashion. Different approaches might be appropriate with regard to the seven dimensions, in which US and Chinese customers differed significantly in their evaluations: *interaction*, *trust*, *response time*, *design appeal*, *intuitiveness*, *business processes*, and *substitutability*. Overall, Chinese consumers tended to rate these factors lower than their US counterparts.

US citizens, however, were less trusting than the Chinese. One possible reason for this difference is the higher uncertainty avoidance on the part of US citizens and the higher-levels of collectivism within the Chinese culture (Hofstede, 1980). It is less

accepting to be suspicious and mistrustful of people in the Chinese culture than in the US. For Americans high-levels of uncertainty avoidance and short-term orientation cause a demand for functions, such as interactive tools and intuitive navigation schemes which increase their ability to complete transactions online thereby avoiding uncertainty and decreasing the wait time.

The findings thus far suggest that companies would be wise to modify their websites to take into account national culture. When designing websites for different nationalities some aspects, such as interaction, trust, and intuitiveness will need to be handled differently. On the other hand, others may be addressed similarly, such as informational fit-to-task and visual appeal.

## Limitations and Future Research

There are two major limitations to this research. The first is the current lack of cultural dimension data. In order to conduct a true cross-cultural research individual nationality dimensions are required (McCoy, 2002). As mentioned earlier, this data will be collected in the next data collection using individual measures of culture (Dorfman and Howell, 1988).

Secondly, the subjects used in the first round of data collection were students. Some would argue that using students as subjects limits the generalizability of our findings to the general populace of web users. Though we would argue that students included in our study match the general demographics of web consumers, we hope to do further testing on other Web consumer groups. Research by Voich (1995) further supports that students are sufficient surrogates for working professionals.

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